

Recovery Plan Action Status

Plan Name: Hungerfords Crawling Water Beetle (*Brychius hungerfordi*) Final Recovery Plan

Plan Status: Final

Plan Date: 28-Sep-06

Lead Agency: USFWS

Lead Office: East Lansing Ecological Services Field Office

(517)

351-2555)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Hungerford's crawling water Beetle (<i>Brychius hungerfordi</i>)	1	1.1	Define and conserve areas of essential habitat	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Costs for all years are TBD. Cost for FY2009 represents estimated costs for FY2009-2025. Completion of this task is contingent upon results of research on habitat requirements.
Hungerford's crawling water Beetle (<i>Brychius hungerfordi</i>)	1	1.2	Develop and implement site conservation plans for each site to address threats	Not Started			Michigan Department of Natural Resources, Local Governments, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others), Other individuals or groups willing to participate (e.g., landowners), Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Costs for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected in years 1-3. Completion of this task is contingent upon results of research on habitat requirements, threats, and life history.
Hungerford's crawling water Beetle (<i>Brychius hungerfordi</i>)	2	1.3	Review Federal, State, and private actions	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program	Work type not yet selected	Labor type not yet selected	Costs for all years are TBD. Cost will depend on the number and complexity of Federal, State, and private actions during a given year.

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Hungerford's crawling water Beetle (Brychius hungerfordi)	2	1.4	Land acquisition and conservation	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Work type not yet selected	Labor type not yet selected	Costs for all years are TBD.
Hungerford's crawling water Beetle (Brychius hungerfordi)	2	1.5.1	Conserve riparian buffers	Not Started			Michigan Department of Natural Resources, Local Governments, Natural Resource Conservation Service, USFWS Ecological Services Program, USFWS Partners for Fish and Wildlife Program, USFWS Division of Fisheries, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Work type not yet selected	Labor type not yet selected	Costs for all years are TBD. Cost will vary depending on the area and its existing conditions.

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Hungerford's crawling water Beetle (Brychius hungerfordi)	2	1.5.2.1	Implement erosion control BMPs for road/stream crossings to minimize sedimentation, as appropriate	Ongoing Current	FY 2005		Michigan Department of Natural Resources, Local Governments, Natural Resource Conservation Service, USFWS Ecological Services Program, USFWS Partners for Fish and Wildlife Program, USFWS Division of Fisheries, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Costs for all years are TBD. Cost will depend on the number and nature of road/stream crossing projects.
Hungerford's crawling water Beetle (Brychius hungerfordi)	2	1.5.2.2	Conduct in-stream projects such as bank stabilization projects, as appropriate	Ongoing Current	FY 2000 - FY 2004		Michigan Department of Natural Resources, Local Governments, Natural Resource Conservation Service, USFWS Ecological Services Program, USFWS Partners for Fish and Wildlife Program, USFWS Division of Fisheries, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Costs for all years are TBD. Cost will depend on the number and nature of instream projects.

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Hungerford's crawling water Beetle (Brychius hungerfordi)	2	1.5.2.3	Conduct other stream and watershed restoration activities that result in benefits to occupied watersheds, as appropriate	Ongoing Current	FY 2005		Michigan Department of Natural Resources, Local Governments, Natural Resource Conservation Service, USFWS Ecological Services Program, USFWS Partners for Fish and Wildlife Program, USFWS Division of Fisheries, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Management: Land Use	Labor type not yet selected	Costs for all years are TBD. Cost will depend on the number and nature of instream projects.
Hungerford's crawling water Beetle (Brychius hungerfordi)	2	1.5.3	Investigate the potential for transportation of hazardous materials (e.g., oil and other chemicals) on roads within occupied watersheds and potential for spills	Not Started			Local Governments, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Work type not yet selected	Labor type not yet selected	
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	1.6	Coordinate with Canadian officials regarding the North Saugeen River site	Ongoing Current	FY 2009		Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Management: International Cooperation	Labor type not yet selected	

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Hungerford's crawling water Beetle (Brychius hungerfordi)	1	2.1	Conduct studies to examine life history and ecology of B. hungerfordi	Ongoing Not Current	FY 2000 - FY 2004		Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Research: Dietary Studies	Labor type not yet selected	Costs for FY 2009-2025 are TBD. Additional research may be necessary in years 4-20.
Hungerford's crawling water Beetle (Brychius hungerfordi)	1	2.2	Examine habitat requirements	Ongoing Current	FY 2009		Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Research: Habitat Requirements	Contract	Costs for FY 2009-2025 are TBD. Additional research may be necessary in years 4-20.
Hungerford's crawling water Beetle (Brychius hungerfordi)	1	2.3	Confirm threats to the species	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Costs for FY 2009-2025 are TBD. Additional research may be necessary in years 4-20.
Hungerford's crawling water Beetle (Brychius hungerfordi)	2	2.4	Conduct studies to examine population dynamics and demography	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected for years 1-3.
Hungerford's crawling water Beetle (Brychius hungerfordi)	2	2.5	Investigate genetic heterogeneity and population viability	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected for years 1-3.

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Hungerford's crawling water Beetle (Brychius hungerfordi)	2	2.6	Investigate utility of captive propagation and translocation	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Other individuals or groups willing to participate (e.g., landowners), Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected for years 1-3.
Hungerford's crawling water Beetle (Brychius hungerfordi)	2	2.7	Investigate hydrological needs of species	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others), Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected for years 1-3.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	2.8	Convene scientific meeting to share information	Ongoing Current	FY 2000 - FY 2004		Michigan Natural Features Inventory, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Other: Information and Education	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	3.1	Develop standard survey and monitoring protocols	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected in years 1-3.

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Hungerford's crawling water Beetle (Brychius hungerfordi)	3	3.2	Continue to survey new locations to identify new populations or areas of suitable habitat	Ongoing Current	Prior to FY 1995		Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Research: Population Surveys	Labor type not yet selected	Costs for FY 2009-2025 are TBD. Additional surveys may be necessary in years 4-20.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	3.3	Develop and implement a monitoring plan for all known sites	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others), Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025. No costs are expected in years 4-20.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	4.1.1	Develop informational materials on B. hungerfordi and endangered species conservation	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025.

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Hungerford's crawling water Beetle (Brychius hungerfordi)	3	4.1.2	Develop informational materials on the importance of local and watershed level conservation	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	4.2	Conduct landowner contact and educational programs to increase awareness of B. hungerfordi	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	4.3	Contact local organizations to inform them of the beetle	Ongoing Current	FY 2000 - FY 2004		Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Local Conservation Organizations (e.g., The Nature Conservancy, Tip of the Mitt Watershed Council, Conservation Resource Alliance, and others)	Other: Information and Education	Labor type not yet selected	

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Hungerford's crawling water Beetle (Brychius hungerfordi)	3	5	Revise Recovery Criteria and recovery actions, as appropriate, based on research and new information	Not Started			Michigan Department of Natural Resources, Michigan Natural Features Inventory, USFWS Ecological Services Program, Universities and Research Institutions, Recovery Working Group for B. hungerfordi	Work type not yet selected	Labor type not yet selected	Cost for FY 2009 represents estimated costs for FY 2009-2025.
Hungerford's crawling water Beetle (Brychius hungerfordi)	3	6	Develop a plan to monitor B. hungerfordi after it is delisted	Not Started			Michigan Department of Natural Resources, USFWS Ecological Services Program	Work type not yet selected	Labor type not yet selected	